UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,196	02/19/2004	Stephen G. Rayment	12453-3	4095

7590 07/25/2007

Cassan MacLean
Suite 401
80 Aberdeen St.
Ottawa, ON K1S 5R5
CANADA

EXAMINER	
WONG, XAVIER S	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
07/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,196	RAYMENT ET AL.	
	Examiner	Art Unit	
	Xavier Szewai Wong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19th February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19th February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *31st AUG 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Information Disclosure Statement

The information disclosure statement submitted on *31st August 2005* has been considered by the Examiner and made of record in the application file.

Drawings

The drawings are objected to because figure labels are blurred. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1 – 24** are rejected under 35 U.S.C. 102(b) as being anticipated by **Chang et al (U.S Pat 6,487,406 B1)**.

Consider claim **1**, **Chang et al** show in figure *2* a mesh network of a plurality of nodes providing wireless network access to at least one wireless end user device [mobile station MS *18*], a gateway node [GR *32*, HA/FA *42*, BSC *14*] for providing MS tracking and data traffic services to the mesh network (col. *4* ln. *20-28*; col. *6* ln. *1-8*) wherein the gateway node comprises:

a) Gateway communication module for receiving data traffic from another network external to the mesh network (col. *6* ln. *19-25*);

b) Backhaul communications module [GR *32* forwards and receives datagrams] for sending and receiving data traffic to and from the network (col. *9* ln. *25-26/34-36*);

c) Control module [BSC] for controlling and routing data traffic between the mesh network [e.g. PCS subnet *1*] and another network [e.g. PCS subnet *2*] based on entries in location and association table (col. *2* ln. *33-50*; clm. *26*; figs. *4* & *12* steps *130-134*);

d) Location "table" maintained by FA/HA to record current location of each MS determined by the particular PCS network node address the MS is located at (col. *2* ln. *55-57*; col. *5* ln. *61-65*);

e) Association table for recording which node each MS is associated with wherein each MS is being associated with (col. *6* ln. *4-8*) only one node at any one time (col. *7* ln. *48-51*) [since a registration *updates* the association table to reflect the *present* BS connection of the MS for appropriate routing of datagrams, the MS is only associated with one BS node at a particular time].

Consider claims **2** and **24**, as applied to claims **1** and **2**, **Chang et al** disclose the location "table" is periodically updated through the gateway node from the network when a MS changes location as wireless coverage changes (col. *8* ln. *19-26/33-37*).

Consider claims **3 – 5**, as applied to claims **2** and **3**, **Chang et al** disclose update data, which comprise of a list of each MS addresses (col. *5* ln. *55-57*), is received from BS nodes in the mesh PCS network (col. *6* ln. *19-36*) wherein the updates are received from another gateway BSC node (col. *6* ln. *9-18*; fig. *3* subnets *1,2,3*).

Consider claim **6**, as applied to claim **1**, **Chang et al** disclose the BSC control module repackages data packets to provide the MS in a new destination node, which is different from the node previously associated with the MS, and destination address providing coverage for the MS (col. *3* ln. *2-6*; col. *4* ln. *51-58*; col. *6* ln. *1-4*; col. *7* ln. *9-13*).

Consider claims **7** and **8**, as applied to claims **2** and **7**, **Chang et al** disclose the gateway node notifies each BS node in the network about the location of the MS

associated with the node (col. *6* ln. *1-8*) as well as changes in the tables (col. *5* ln. *62-65*; col. *6* ln. *19-22* [table not updated initially, but updated eventually]).

Consider claim **9**, **Chang et al** show in figure *3* a mesh network providing wireless access to a plurality of roaming mobile stations [MS] wherein the network comprises:

a) a gateway node [GR1, HA/FA, BSC] for relaying traffic between another network external [internet, PCS network *2*] to the mesh network (fig. *3*);

b) a plurality of BS nodes interconnected in a mesh configuration (PCS subnets *1*,*2*,*3* in fig. *3*) wherein each BS *16* is at least in communication with one BS in communication with a gateway node [GR,FA/HA,BSC] (fig. *2*);

c) at least one BS *16* is in wireless communication with at least one MS *18* (fig. *2*) wherein;

- each MS is associated with a single BS node (fig. *2* one MS → one BS);
- each gateway node has a record of the location, by an address of the wireless providing node, of each MS in the mesh (col. *2* ln. *33-50*; clm. *26*; figs. *4* & *12* steps *130-134*);
- each gateway node routes data traffic destined for a roaming MS to a BS providing wireless access to the MS based on location record (col. *6* ln. *1-8*); wherein the MS being provided wireless access by a BS node other than a BS node associated with the MS (col. *2* ln. *41-50*; col. *6* ln. *19-45*).

Consider claim **10**, as applied to claim **9**, **Chang et al** disclose each gateway node has a record of which MS is associated with which BS node (col. *6* ln. *1-8*).

Consider claim **11**, as applied to claim **9**, **Chang et al** disclose BS nodes relaying data traffic between each other to deliver traffic to destination BS node (col. *6* ln. *9-18/ 38-45*; col. *7* ln. *48-51*).

Consider claim **12**, as applied to claim **9**, **Chang et al** mention a MS node communicates with an IWF internetworking node through Point-to-Point connection (col. *1* ln. *49-53*; fig. *1* items *18* & *24*).

Consider claim **13**, as applied to claim **9**, **Chang et al** disclose each BS [or HA/FA when in another subnet] node [along with MS node] is periodically notified by a gateway node of locations of any roaming MS associated with the node (col. *8* ln. *19-40*; fig. *11* steps *100,102,106*).

Consider claim **14**, as applied to claim **13**, **Chang et al** disclose data traffic destined for a particular roaming MS is [inherently buffered/stored] in a HA/FA [or GR] associated with the MS [in a new subnet] until the GR accesses its ARP cache to determine the association between the MS IP address and the [new] BSC hardware address and forwards the data traffic to the roaming MS (col. *9* ln. *11-27*).

Consider claim **15**, as applied to claim **9**, **Chang et al** disclose data traffic between two MSs (fig. *2* MSs *18*) is exchanged between BS nodes (fig. *2* BS *16* ←→ BSC *14*) providing wireless access to the two MSs after initial data traffic is exchanged [e.g. PCS registration] between BS nodes associated with the two MSs (col. *5* ln. *61-67*; col. *6* ln. *1-4/28-36*).

Consider claims **16** and **20**, **Chang et al** disclose a method of routing data traffic destined for a roaming mobile stations (MS) in a mesh network having a plurality of

nodes providing wireless access to a plurality of MS (fig. *3* items *10.1,18,40.1-40.4*); the network having at least one gateway node for providing data traffic services (fig. *3* item *32/40*), each MS being associated with one of the nodes and the roaming MS being a wireless end user device being provided wireless access by a node that the MS is not associated with (col. *2* ln. *41-50*), the method comprising:

a) receiving data traffic destined for a roaming MS at a gateway node (col. *4* ln. *20-28*; col. *9* ln. *7-9/20-26*) and an associated BS node receives data traffic from the MS (col. *5* ln. *23-26*);

b) checking a record [association table] in the gateway node for a location of the roaming MS and location being an indication of which node in the network is providing wireless access to the MS (col. *6* ln. *5-8*) and determining location of the MS by an associated BS node from the gateway node (col. *5* ln. *61-66*);

c) repackaging data traffic [by Care of Address COA] for routing to roaming MS such that repackaged data traffic is now destined for a node by location providing wireless access to the MS (col. *3* ln. *2-6*; col. *4* ln. *51-58*; col. *6* ln. *1-4*);

d) sending the repackaged data traffic to the node denoted by location which provides wireless access to the roaming MS (col. *6* ln. *38-45*; col. *7* ln. *48-51*).

Consider claims **17** and **21**, as applied to claims **16** and **20**, **Chang et al** disclose when the MS is visiting another subnet away from home agent HA [therefore, foreign agent FA does not contain a location of the MS / location cannot be determined yet], the MS registers with the FA and the HA routes data [stored/buffered] to the FA node (col. *9* ln. *11-13*); the gateway node sends [new] data to a Base Station Controller [BSC] serving

the MS to determine the MS location (col. *9* ln. *17-25*); then the data repackaging and sending to the denoted node processes begin (col. *9* ln. *26-38*; refer to claim *20* above).

Consider claim **18**, as applied to claim **17**, **Chang et al** disclose receiving an update at a BS node and updating location record of the MS (col. *5* ln. *23-26*; col. *6* ln. *1-4*); transferring location record to the node (col. *6* ln. *11-15*); forwarding [buffered] data from the previous associated node to a new denoted node (col. *6* ln. *38-45*).

Consider claim **19**, as applied to claim **18**, **Chang et al** disclose repackaging data to create a data package [by packet re-addressing approach with a Care of Address COA] and destined to a new node (col. *3* ln. *2-6*; col. *4* ln. *51-56*; col. *6* ln. *42-45*; col. *9* ln. *11-14*).

Consider claim **22**, **Chang et al** disclose a method of routing data traffic destined for a roaming mobile stations (MS) in a mesh network having a plurality of nodes providing wireless access to a plurality of MS (fig. *3* items *10.1*,*18*,*40.1-40.4*); the network having at least one gateway node for providing data traffic services (fig. *3* item *32*/*40*), each MS being associated with one of the nodes and the roaming MS being a wireless end user device being provided wireless access by a node that the MS is not associated with (col. *2* ln. *41-50*), the method comprising: receiving a data package [datagram] addressed to a destination node [BS] providing roaming service to the MS (col. *9* ln. *25-31*); unpackaging data package and transmitting data to the MS (col. *9* ln. *31-34*); if the MS is in the same [associated BSC] node, the gateway node will continue forwarding subsequent packages [datagram] to the MS (col. *6* ln. *15-18*; fig. *3* GR1 → HA/FA → BSC →

MS); and if MS is not in associated node, establishing a connection between the last [source] BSC to a new [source] BSC for subsequent data to the MS (col. *6* ln. *19-45*).

Consider claim **23**, as applied to claim **18**, **Chang et al** disclose location of the last roaming access provider [HA] to the node (col. *6* ln. *1-8*).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A.) **Naghian et al** (**U.S Pub 2003/0235175 A1**) disclose a mobile mesh ad-hoc networking scheme for roaming mobile nodes.

B.) **Borella et al** (**U.S Pat 6,816,912 B1**) disclose a tunnel optimized call setup for mobile devices roaming from a home to foreign network.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be **brought to**:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xavier Wong whose telephone number is (571) 270-

1780. The examiner can normally be reached on Monday through Friday 8 am - 5 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.

Xavier Szewai Wong
X.S.W / x.s.w
18th July 2007

Seema S. Rao
SEEMA S. RAO 7/23/07
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600